WHAT IS CLAIMED IS:

1. A manufacturing method of a semiconductor device, comprising:

providing a semiconductor substrate of a first conductivity type;

forming a low impurity drain layer of a second conductivity type in a surface of the semiconductor substrate;

forming a gate insulation film on the semiconductor substrate;

forming a gate electrode on the gate insulation film;

forming a high impurity drain layer of the second conductivity type so as to be adjacent the low impurity drain layer and apart from the gate electrode, the high impurity drain layer having an impurity concentration higher than an impurity concentration of the low impurity drain layer; and

forming a buried layer of the first conductivity type in a region deeper than the high impurity drain layer so that the buried layer forms a PN junction with the high impurity drain layer.

2. The manufacturing method of a semiconductor device of claim 1, wherein the buried layer is formed so as not to be in contact with the low impurity drain layer.

3. A manufacturing method of a semiconductor device, comprising:

providing a semiconductor substrate of a first conductivity type;

forming a low impurity drain layer of a second conductivity type in a surface of the semiconductor substrate;

forming a field oxide film on the low impurity drain layer;

forming a gate insulation film on the semiconductor substrate;

forming a gate electrode on the gate insulation film so as to extend to a portion of the field oxide film;

forming a high impurity drain layer of the second conductivity type so as to be adjacent the low impurity drain layer and apart from the gate electrode, the high impurity drain layer having an impurity concentration higher than an impurity concentration of the

low impurity drain layer; and

forming a buried layer of the first conductivity type in a region deeper than the high impurity drain layer so that the buried layer forms a PN junction with the high impurity drain layer.

4. The manufacturing method of a semiconductor device of claim 3, wherein the forming of the high impurity drain layer comprises a first ion implantation.

5. The manufacturing method of a semiconductor device of claim 4, wherein the forming of the buried layer further comprises a second ion implantation, and the second ion implantation is directed to a region that is inside a region to which the first ion implantation is directed.

6. A manufacturing method of a semiconductor device, comprising:

providing a semiconductor substrate of a first conductivity type;

forming a low impurity drain layer of a second conductivity type in a surface of the semiconductor substrate;

forming a first high impurity drain layer of the second conductivity type in a region adjacent the low impurity drain layer;

forming a gate insulation film on the semiconductor substrate;

forming a gate electrode on the gate insulation film; and

forming a source layer of the second conductivity type in the surface of the semiconductor substrate and a second high impurity drain layer of the second conductivity type in the first high impurity drain layer in a same ion implantation process, a depth of the source layer being smaller than a depth of the first high impurity drain layer, and each of the first and second high impurity drain layers having an impurity concentration higher than an impurity concentration of the low impurity drain layer.

7. The manufacturing method of a semiconductor device of claim 6, wherein the first high impurity drain layer is formed so that the depth of the first high impurity drain layer

is larger than a depth of the low impurity drain layer.

8. The manufacturing method of a semiconductor device of claim 6, wherein the first high impurity drain layer is formed so that the depth of the first high impurity drain layer is smaller than a depth of the low impurity drain layer.

9. A manufacturing method of a semiconductor device, comprising:

providing a semiconductor substrate of a first conductivity type;

forming a low impurity drain layer of a second conductivity type in a surface of the semiconductor substrate;

forming a first high impurity drain layer of the second conductivity type in a region adjacent the low impurity drain layer;

forming a buried layer of the first conductivity type in a region deeper than the first high impurity drain layer;

forming a gate insulation film on the semiconductor substrate;

forming a gate electrode on the gate insulation film; and

forming a source layer of the second conductivity type in the surface of the semiconductor substrate and a second high impurity drain layer of the second conductivity type in the first high impurity drain layer in a same ion implantation process, a depth of the source layer being smaller than a depth of the first high impurity drain layer, and each of the first and second high impurity drain layers having an impurity concentration higher than an impurity concentration of the low impurity drain layer.

10. The manufacturing method of a semiconductor device of claim 9, wherein the first high impurity drain layer is formed so that the depth of the first high impurity drain layer is larger than a depth of the low impurity drain layer.

11. The manufacturing method of a semiconductor device of claim 9, wherein the first high impurity drain layer is formed so that the depth of the first high impurity drain layer is smaller than a depth of the low impurity drain layer.

12. A manufacturing method of a semiconductor device, comprising:

providing a semiconductor substrate of a first conductivity type;

forming a low impurity drain layer of a second conductivity type in a surface of the semiconductor substrate;

forming a gate insulation film on the semiconductor substrate;

forming a gate electrode on the gate insulation film;

forming a high impurity drain layer of the second conductivity type in the low impurity drain layer so that the high impurity layer is apart from the gate electrode, the high impurity drain layer having an impurity concentration higher than an impurity concentration of the low impurity drain layer; and

forming a buried layer of the first conductivity type in a region deeper than the high impurity drain layer so that the buried layer forms a PN junction with the high impurity drain layer.